

## SECTION 02225

### EXPANDED POLYSTYRENE BACKFILL

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Expanded polystyrene foam insulation backfill (replacing backfill to reduce earth pressures) referred to as "geofoam". Product to be used to reduce soil pressure against building basement walls.

##### 1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.
- B. Related Sections:
  - 1. Division 2 Section 02220 "Structural Excavation" for excavation and surface preparation prior to installing foam insulation blocks; dewatering, drainage fill, and testing of subgrade.
  - 2. Division 3 Section 03300 "Cast-in-Place Concrete."

##### 1.3 SUBMITTALS

- A. Submit shop drawings for all products specified in this section in accordance with the requirements of General and Supplemental Conditions.
- B. Shop Drawings: Submit shop drawings showing layout and sizes of foam insulation blocks
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for insulation products.

##### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of building insulation through one source.

##### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect plastic insulation as follows:
  - 1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
  - 2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
  - 3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

#### PART 2 - PRODUCTS

##### 2.1 INSULATING MATERIALS

- A. General: Provide expanded polystyrene foam backfill materials that comply with requirements and with referenced standards.
  - 1. Preformed Block Units: Sizes to fit applications indicated; selected from manufacturer's standard thicknesses, widths, and lengths, not less than 1' - 8" x 4' - 0" x 4' - 0".
- B. Molded-Polystyrene backfill: ASTM C 578, of type and density indicated below, with maximum flame-spread and smoke-developed indices of 75 and 450, respectively:

1. Type IX, 2.0 lb/cu. ft.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for Sections in which substrates and related work are specified, including "Earthwork" section, and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PROTECTION

- A. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective materials as necessary, prior to installation.
- B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust prior to installation.
- C. Dewatering: Comply with requirements for dewatering specified in Division 2 Section "Structural Excavation".

### 3.3 APPROVAL OF SUBGRADE

- A. Notify Construction Manager when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material.
  1. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities.
- D. Fill unauthorized excavations under construction as directed by Construction Manager.

### 3.4 INSTALLATION OF FOAM BLOCK BACKFILL

- A. Comply with foam block insulation manufacturer's written instructions applicable to expanded polystyrene backfill.
- B. For multiple layers of foam blocks, orient successive layers with long axis of blocks perpendicular to previous layer. Offset block joints between layers.
- C. In order to facilitate construction, provide horizontal restraint between layers of foam blocks. Use manufacturer's grip plates placed between horizontal layers of blocks.
- D. Install foam block that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice or snow.
- E. Extend foam blocks in thickness indicated to cover entire area to be filled with expanded polystyrene backfill blocks. Cut and fit around obstructions and fill voids with foam blocks.
- F. Place foam blocks in excavations promptly, but not before completing the following:
  1. Construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
  2. Surveying locations of underground utilities for record documents.
  3. Inspecting and testing underground utilities.
  4. Removing concrete formwork.
  5. Removing trash and debris.
  6. Removing temporary shoring and bracing, and sheeting.

- G. Protect foam blocks from damage during backfilling.
- H. Commence with the placement of overlying materials as soon as possible after installation and cover as quickly as possible.

### 3.5 INSTALLED INSULATION PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where foam insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

**END OF SECTION 02225**